A thought to start our day together…

The capacity to learn is a *gift;* the ability to learn is a *skill;* the willingness to learn is a *choice.*

Brian Herbert

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HANDOUT PAGE 2

OUTCOMES

Participants will:
- learn about an instructional framework for designing high-quality classroom instruction that increases the likelihood that students will master the content of the standards;
- deepen understanding of research-based elements of instruction; and
- explore formal and informal options for assessing student learning and using the results to plan next steps for supporting all learners.

"Educational research suggests that the single most influential component of an effective school is the individual teachers within the school."

~Robert J. Marzano~

Three Critical Interventions (COMMITMENTS):

- A system of individual clear learning goals connected to student feedback and evaluation at the classroom, school, and district levels
- Ensuring effective teaching in every classroom
- Building background knowledge for all students

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Great Educators…

- Are first and foremost learners who have a *teachable* spirit.
- Are constantly looking to ***improve*** their skills in the craft of teaching and learning.

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Today's Learning Outcomes…

Participants will:
- learn about an instructional framework for designing high-quality classroom instruction that increases the likelihood that students will master the content of the standards;
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AFFIRMATION

REMINDER

NEW LEARNING

Slide 1

2 "With a Partner" Time

P A R T N E R S

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Slide 2

3

feedback (specific information provided to and from the teacher and learner to clarify and guide learning)
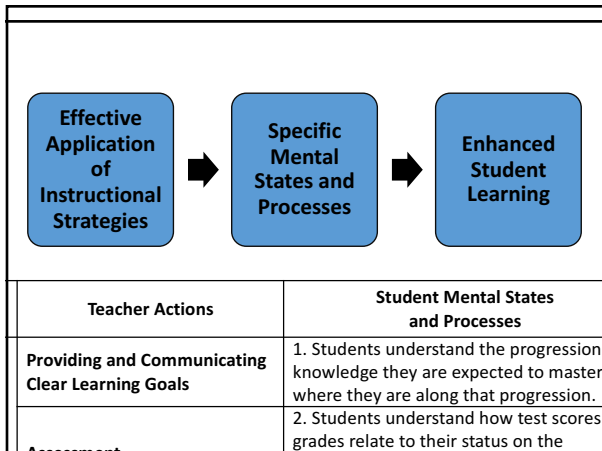
content (the ways in which lessons typically progress from direct instruction through use and review of the knowledge and skills being learned)

context (addressing the psychological needs of students—things like engagement, a sense of belonging, and high expectations)

These are suggested as considerations as a teacher plans daily lessons.

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Slide 3

| Effective Application of Instructional Strategies | → | Specific Mental States and Processes | → | Enhanced Student Learning |

Teacher Actions	Student Mental States and Processes
Providing and Communicating Clear Learning Goals	1. Students understand the progression knowledge they are expected to master where they are along that progression.
Assessment	2. Students understand how test scores grades relate to their status on the

Slide 4

THE NEW ART AND SCIENCE OF TEACHING

FEEDBACK	CONTENT	CONTEXT
Providing and Communicating Clear Learning Goals 1. Providing Scales and Rubrics 2. Tracking Student Progress 3. Celebrating Success ***Assessment*** 4. Informal Assessments of the Whole Class 5. Formal Assessments of Individual Students	***Direct Instruction Lessons*** 6. Chunking Content 7. Processing Content 8. Recording and Representing Content ***Practicing and Deepening Lessons*** 9. Structured Practice Sessions 10. Examining Similarities and Differences 11. Examining Errors in Reasoning ***Knowledge Application Lessons*** 12. Engaging Students in Cognitively Complex Tasks 13. Providing Resources and Guidance 14. Generating and Defending Claims ***Strategies That Appear in All Types of Lessons*** 15. Previewing 16. Highlighting Critical Information 17. Reviewing Content 18. Revising Knowledge 19. Reflecting on Learning 20. Purposeful Homework 21. Elaborating on Information 22. Organizing Students to Interact	***Engagement*** 23. Noticing When Students Are Not Engaged and Reacting 24. Increasing Response Rates 25. Using Physical Movement 26. Maintaining a Lively Pace 27. Demonstrating Intensity and Enthusiasm 28. Presenting Unusual Information 29. Using Friendly Controversy 30. Using Academic Games 31. Providing Opportunities for Students to Talk About Themselves 32. Motivating and Inspiring Students ***Rules and Procedures*** 33. Establishing Rules and Procedures 34. Organizing the Physical Layout of the Classroom 35. Demonstrating "Withitness" 36. Acknowledging Adherence to Rules and Procedures 37. Acknowledging Lack of Adherence to Rules and Procedures ***Relationships*** 38. Using Verbal and Nonverbal Behaviors that Indicate Affection for Students 39. Understanding Students' Backgrounds and Interests 40. Displaying Objectivity and Control ***Communicating High Expectations*** 41. Demonstrating Value and Respect for Reluctant Learners 42. Asking In-Depth Questions of Reluctant Learners 43. Probing Incorrect Answers with Reluctant Learners

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Slide 5

THE NEW ART AND SCIENCE OF TEACHING

FEEDBACK	CONTENT	CONTEXT
Providing and Communicating Clear Learning Goals 1. Providing Scales and Rubrics 2. Tracking Student Progress 3. Celebrating Success ***Assessment*** 4. Informal Assessments of the Whole Class 5. Formal Assessments of Individual Students	***Direct Instruction Lessons*** 6. Chunking Content 7. Processing Content 8. Recording and Representing Content ***Practicing and Deepening Lessons*** 9. Structured Practice Sessions 10. Examining Similarities and Differences 11. Examining Errors in Reasoning ***Knowledge Application Lessons*** 12. Engaging Students in Cognitively Complex Tasks 13. Providing Resources and Guidance 14. Generating and Defending Claims ***Strategies That Appear in All Types of Lessons*** 15. Previewing 16. Highlighting Critical Information 17. Reviewing Content 18. Revising Knowledge 19. Reflecting on Learning 20. Purposeful Homework 21. Elaborating on Information 22. Organizing Students to Interact	***Engagement*** 23. Noticing When Students Are Not Engaged and Reacting 24. Increasing Response Rates 25. Using Physical Movement 26. Maintaining a Lively Pace 27. Demonstrating Intensity and Enthusiasm 28. Presenting Unusual Information 29. Using Friendly Controversy 30. Using Academic Games 31. Providing Opportunities for Students to Talk About Themselves 32. Motivating and Inspiring Students ***Rules and Procedures*** 33. Establishing Rules and Procedures 34. Organizing the Physical Layout of the Classroom 35. Demonstrating "Withitness" 36. Acknowledging Adherence to Rules and Procedures 37. Acknowledging Lack of Adherence to Rules and Procedures ***Relationships*** 38. Using Verbal and Nonverbal Behaviors that Indicate Affection for Students 39. Understanding Students' Backgrounds and Interests 40. Displaying Objectivity and Control ***Communicating High Expectations*** 41. Demonstrating Value and Respect for Reluctant Learners 42. Asking In-Depth Questions of Reluctant Learners 43. Probing Incorrect Answers with Reluctant Learners

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Slide 6

AN INSTRUCTOR GENERALLY SAYS 100-200 WORDS A MINUTE AND A STUDENT ONLY HEARS 50-100—HALF.

WORSE YET, IN A T CLASS, STUDENTS A JUST 40 PERCENT O

STUDENTS RETAIN ABOUT 70% OF WHAT THEY HEAR IN THE FIRST 10 MINUTES OF CLASS

MIX 'N MINGLE

= Move around the room

MIX 'N MINGLE

= Stop to find a discussion partner

?

What is important to remember about the structure of *The New Art and Science of Teaching*? Please include 3, 10, 43 in your discussion.

?

Discuss the terms learning goal and learning target. How are the two words related? Why are these important to identify?

?

What is a proficiency scale? What are some of the possible uses of a proficiency scale in the classroom?

?

What are some important considerations for chunking content? How about for processing content?

Today's Learning Outcomes…

Participants will:
- **learn about an instructional framework for designing high-quality classroom instruction that increases the likelihood that students will master the content of the standards;**
- **deep understanding of research-based elements of instruction; and**
- **explore formal and informal options for assessing student learning and using the results to plan next steps for supporting all learners.**

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Three Non-Negotiables of Every Lesson of Instruction

1) Quality planning
2) Quality content delivery
3) Quality informal and/or formal assessment

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THE NEW ART AND SCIENCE

FEEDBACK	CONTENT
Providing and Communicating Clear Learning Goals 1. Providing Scales and Rubrics 2. Tracking Student Progress 3. Celebrating Success *Assessment* 4. Informal Assessments of the Whole Class 5. Formal Assessments of Individual Students	*Direct Instruction Lessons* 6. Chunking Content 7. Processing Content 8. Recording and Representing Content *Practicing and Deepening Less* 9. Structured Practice Sessions 10. Examining Similarities and Differences 11. Examining Errors in Reasoning *Knowledge Application Lesson* 12. Engaging Students in Cognitively Con 13. Providing Resources and Guidance 14. Generating and Defending Claims *Strategies That Appear in All T Lessons* 15. Previewing

---

Informal assessments of the whole class are meant to provide a barometer of how the whole class is performing regarding the progression of knowledge articulated in a specific proficiency scale. Informal assessments of the whole class typically don't involve recorded scores for individual students.

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Additional thinking...

o Everyday interactions are potential assessment opportunities.

o Informal assessments embed assessment into activities already occurring the classroom.

o Quick, spontaneous, "on-the-fly", flexible

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What informal assessment strategies did I use yesterday?

What informal assessment strategies do you use in your classroom?

Please record these on handout page 7.

FEEDBACK	
Providing and Communicating Clear Learning Goals	
Element 1 Providing Scales and Rubrics	
Element 2 Tracking Student Progress	
Element 3 Celebrating Success	
FEEDBACK	
Assessment	
Element 4 Informal Assessments of the Whole Class	
Element 5 Formal Assessments of Individual Students	

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Let's check our understanding....

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Fist to Five Check

I completely understand

I mostly understand

I understand pretty well

I could use more practice

I need help
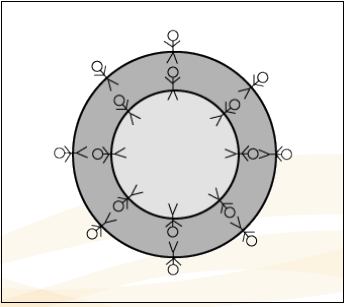
I don't understand at all

Think-Pair-Share

According to 5th grader Abby, "I feel very good inside because when someone else hears my thoughts and understands them, then they tell me what was good about what I said."

This strategy is a simple but powerful tool that should be used repeatedly and consistently throughout the day!

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Inside-Outside Circle

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Have you done a <u>Scoot</u>?

o Write content questions (enough so there is one on every desk).
o Give each student a response sheet (depending on level, they can respond with A,B,C or single words or sentences).
o Each child goes to a desk and reads the question on the card and marks their response on their sheet. At the teacher's signal, they move to the next desk.
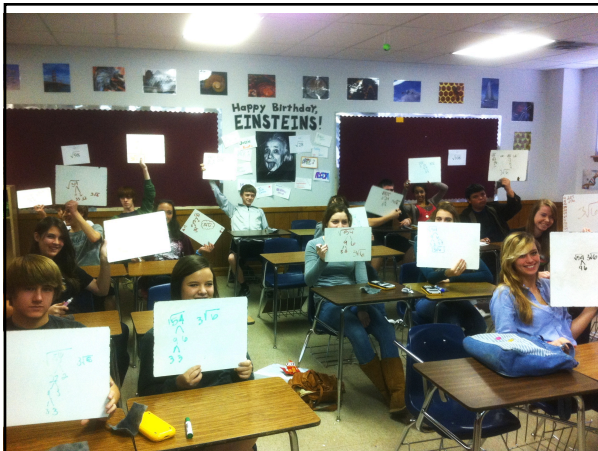
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Hold-Ups

- Number Card
- True/Not True
- Multiple-choice
- Whiteboard

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Have you heard about Plickers?

- www.plickers.com
- Free app you download on teacher's phone or ipad
- Each student has a card (get online)
- Students hold up answer to multiple choice question
- Teacher scans with device
- Almost instantly tells you which student has which answer
- Can use the same set of cards for multiple class periods

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Strategies:
Assess and Plan with Exit Tickets

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Slide 1

THE NEW ART AND SCIENCE OF TEACHING

FEEDBACK	CONTENT	CONTEXT

Providing and Communicating Clear Learning Goals
1. Providing Scales and Rubrics
2. Tracking Student Progress
3. Celebrating Success

Assessment
4. Informal Assessments of the Whole Class
5. Formal Assessments of Individual Students

Direct Instruction Lessons
6. Chunking Content
7. Processing Content
8. Recording and Representing Content

Practicing and Deepening Lessons
9. Structured Practice Sessions
10. Examining Similarities and Differences
11. Examining Errors in Reasoning

Knowledge Application Lessons
12. Engaging Students in Cognitively Complex Tasks
13. Providing Resources and Guidance
14. Generating and Defending Claims

Strategies That Appear in All Types of Lessons
15. Previewing
16. Highlighting Critical Information
17. Reviewing Content
18. Revising Knowledge
19. Reflecting on Learning
20. Purposeful Homework
21. Elaborating on Information
22. Organizing Students to Interact

Engagement
23. Noticing When Students Are Not Engaged and Reacting
24. Increasing Response Rates
25. Using Physical Movement
26. Maintaining a Lively Pace
27. Demonstrating Intensity and Enthusiasm
28. Presenting Unusual Information
29. Using Friendly Controversy
30. Using Academic Games
31. Providing Opportunities for Students to Talk About Themselves
32. Motivating and Inspiring Students

Rules and Procedures
33. Establishing Rules and Procedures
34. Organizing the Physical Layout of the Classroom
35. Demonstrating "Withitness"
36. Acknowledging Adherence to Rules and Procedures
37. Acknowledging Lack of Adherence to Rules and Procedures

Relationships
38. Using Verbal and Nonverbal Behaviors that Indicate Affection for Students
39. Understanding Students' Backgrounds and Interests
40. Displaying Objectivity and Control

Communicating High Expectations
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Slide 2

PARTNER A – PARTNER B

It is effective instructional practice to state the following to students,

"You need to know this because it is going to be on the test."

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Slide 3

High-quality classroom assessment includes:

- On-going informal assessment of individual students and the group as a whole (determined by the individual teacher)
- **Formal assessment of individual students and the group as a whole (determined by the individual teacher)**
- **Common assessments given across a grade level or course (determined by a group of teachers)**
- Large scale assessment (MAP, PAWS, ACT, etc.)

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Slide 4

Three types of assessment items to measure the knowledge and skills defined…

- **Level 2 items:** Simpler details and processes that have been explicitly taught
- **Level 3 items:** Complex ideas and processes that have been explicitly taught
- **Level 4 items:** Inferences and applications that go beyond what was taught

EXAMPLE ASSESSMENT

Measurement Topic	Standards
	4.OA.1 Interpret a multiplication equation as a comparison. **4.OA.2** Multiply to solve word problems involving multiplicative comparison.
Multiplication	**4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

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Slide 5

EXAMPLE ASSESSMENT

HANDOUT PAGE 12

Measurement Topic	Standards
Multiplication	**4.OA.1** Interpret a multiplication equation as a comparison. **4.OA.2** Multiply to solve word problems involving multiplicative comparison. **4.NBT.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.0	The learner will: ○ Select the quickest strategy to use to solve word problems that require multiplying whole numbers up to four digits by one-digit whole numbers or
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	**The learner will:** ○ **Multiply to solve word problems involving multiplicative comparison.** ○ **Explain how to multiply a whole number of up to four digits by a one-digit whole number and how to multiply two two-digit numbers.**
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content

Slide 6

4.0	The learner will: ○ Select the quickest strategy to use to solve word problems that require multiplying whole numbers up to four digits by one-digit whole numbers or multiplying two two-digit numbers.
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	**The learner will:** ○ **Multiply to solve word problems involving multiplicative comparison.** ○ **Explain how to multiply a whole number of up to four digits by a one-digit whole number and how to multiply two two-digit numbers.**
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content
2.0	The learner will: ○ Understand vocabulary, *such as*: comparison, equation, four-digit, multiply, one-digit, two-digit, word problem. ○ Interpret a multiplication equation as a comparison. ○ Use arrays and equations to represent multiplication situations. ○ Multiply a whole number of up to four digits by a one-digit whole number. ○ Multiply two two-digit numbers.
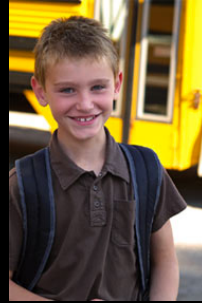
- One of three children
- Mom and Dad work blue collar jobs
- "School is hard."
- Reading below grade level
- HATES math…
- Quiet in the classroom and rarely asks questions, but willing to try

HANDOUT PAGE 13

Determining an Appropriate Summative Score for a Priority Standard

Student #1 Body of Evidence					
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	1.5	2.0	2.0	3.0	3.0	

Student #2 Body of Evidence					
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	2.0	3.0	3.5	3.0		

Formative Formative Formative Formative Formative **Summative**

(4.OA.1, 4.OA.2,

As we make decisions about student learning, we can *never* rely on a single assessment.

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Multiplication

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Student #2 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	2.0	3.0	3.5	3.0		

Student #3 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	2.0	3.0	2.0	1.5	3.0	

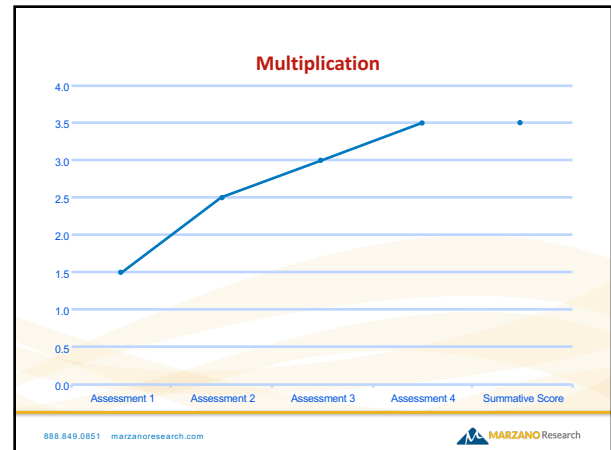| Student #4 Body of Evidence						
Standard(s)	Formative Score #1	Formative Score #2	Formative Score #3	Formative Score #4	Formative Score #5	Summative Score
Multiplication (4.OA.1, 4.OA.2, 4.NBT.5)	4.0	3.5	3.5			

Four "W"s Text Protocol

Adapted from *Four "A"s Text Protocol* from Judith Gray, Seattle, WA 2005

1. Read the text silently, highlighting it and writing notes in the margin in answer to the following four questions:
   - What **Wisdom** does the author share in the text?
   - What content do you **Wrestle** with in the text?
   - What in the text causes you to **Wonder**?
   - What in the text can you **Weave** into your work?

2. Upon cue, have each person identify one piece of **wisdom** in the text, citing the text as evidence.

3. Move through the remaining three questions, making sure each person's voice is heard.

4. As a whole group, respond to the question, "What does this mean for our work

---

	Design Question 1: **Providing and Communicating Clear Learning Goals**	How will I communicate clear learning goals that help students understand the progression of knowledge they are expected to master and where they are along that progression?
FEEDBACK	Design Question 2: **Assessment**	How will I design and administer assessments that help students understand how their test scores and grades are related to their status on the progression of knowledge they are expected to master?
CONTENT	Design Question 3: **Direct Instruction**	When content is new, how will I design and deliver direct instruction lessons that help students understand which parts are important and how the parts fit together?
	Design Question 4: **Practicing and Deepening**	After content has been presented, how will I design and deliver lessons that help students deepen their understanding and develop fluency in skills and processes?
	Design Question 5: **Knowledge Application**	After content has been presented, how will I design and deliver lessons that help students generate and defend claims through knowledge application?
	Design Question 6: **Strategies That Appear in All Types of Lessons**	Throughout all types of lessons, what strategies will I use to help students continually integrate new knowledge with old knowledge and revise their understanding accordingly?
CONTEXT	Design Question 7: **Engagement**	What engagement strategies will I use to help students pay attention, be energized, be intrigued, and be inspired?
	Design Question 8: **Rules and Procedures**	What strategies will I use to help students understand and follow rules and procedures?
	Design Question 9: **Relationships**	What strategies will I use to help students feel welcome, accepted, and valued?
	Design Question 10: **Communicating High Expectations**	What strategies will I use to help typically reluctant students feel valued and comfortable interacting with me or their peers?

THE "WET CEMENT" THEORY

HANDOUT PAGE 17

DIRECT INSTRUCTION LESSONS	
Element 6 *Chunking Content*	• Involves the teacher breaking the content into small chunks of information that can be easily processed by students
Element 7 *Processing Content*	• Involves the teacher using a variety of strategies to allow students to process new knowledge
Element 8 *Recording and Representing Content*	• Involves the teacher engaging students in activities that help them record their understanding of new content in linguistic and nonlinguistic ways

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Category	Average Effect Size	Percentile Gain
Identifying Similarities and Differences	1.61	45
Summarizing and Note Taking	1.00	34
Reinforcing Effort and Providing Recognition	.80	29
Homework and Practice	.77	28
Nonlinguistic Representations	.75	27
Cooperative Learning	.73	27
Setting Objectives/Providing Feedback	.61	23
Generating and Testing Hypotheses	.61	23
Questions, Cues, and Advance Organizers	.59	22

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Research-Based Instruction

○ 'Effect Size' is simply a way of quantifying the difference between two groups.

○ For example, if an instructional strategy was used with one group and not the other, then the effect size is a measure of the effectiveness of the strategy on learning as compared to without it.

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What commonly happens when you ask students to take notes or summarize information?

60

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Element 12: *Record and Represent Knowledge*

*Involves the teacher engaging students in activities that help them record their understanding of content in linguistic and **nonlinguistic** ways*

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Slide 1

A Picture Is Worth A Thousand Words

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Slide 2

Flow Chart/Sequence Diagram

Characteristic Diagram

Cause and Effect Pattern

Problem/Solutions Tree

Slide 3

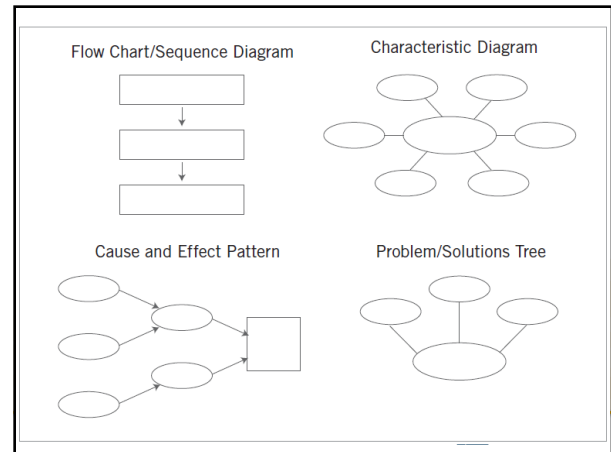**Element 12:** *Record and Represent Knowledge*

*Involves the teacher engaging students in activities that help them record their understanding of content in **linguistic** and nonlinguistic ways*

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Slide 4

Element 12: *Record and Represent Knowledge*

BEFORE DISCUSSION

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Slide 5

Strategies:

Post Its

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Slide 6

Element 12: *Record and Represent Knowledge*

AFTER DISCUSSION

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Academic Notebook Entry

Name: _____ Date: _____
Subject: _____ Topic: _____
Details about what I learned:
1. _____
   _____
2. _____
   _____
3. _____
   _____

Summary of what I learned:

Questions I have about what I learned:

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
S	T	U	V	W	X
Y	Z				

Element 12: *Record and Represent Knowledge*

DURING DISCUSSION

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Combination Notes

Regular notes	Symbol, picture, or graphic
Summary	

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	Identifying Critical Information			Previewing			Organizing Students to Interact	
			Identifying Critical Information	Previewing	Organizing Students to Interact			
Reflecting on Learning			Reflecting on Learning	**ASOT DESIGN QUESTION #2**	Chunking Content		Chunking Content	
			Recording and Representing Knowledge	Elaborating on New Information	Processing of New Information			
Recording and Representing Knowledge				Elaborating on New Information			Processing of New Information	

Slide 1:

FEEDBACK	Design Question 1: **Providing and Communicating Clear Learning Goals**	How will I communicate clear learning goals that help students understand the progression of knowledge they are expected to master and where they are along that progression?
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CONTEXT	Design Question 7: **Engagement**	What engagement strategies will I use to help students pay attention, be energized, be intrigued, and be inspired?
	Design Question 8: **Rules and Procedures**	What strategies will I use to help students understand and follow rules and procedures?
	Design Question 9: **Relationships**	What strategies will I use to help students feel welcome, accepted, and valued?
	Design Question 10: **Communicating High Expectations**	What strategies will I use to help typically reluctant students feel valued and comfortable interacting with me or their peers?

Slide 2:

HANDOUT PAGE 18

PRACTICING AND DEEPENING LESSONS

Element 9 *Structured Practice Sessions*	• Involves the teacher engaging students in practice activities that help them develop fluency
Element 10 *Examining Similarities and Differences*	• Involves the teacher helping students deepen their knowledge by examining similarities and differences between items
Element 11 *Examining Errors in Reasoning*	• Involves the teacher helping students deepen their understanding of informational content by having them examine their own reasoning or the logic of the information presented to them

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Slide 3:

HANDOUT PAGE 19

Element #9: Structured Practice Sessions

Desired Effect: Students perform the skill, strategy, or process with increased skill or confidence.

How can I help students practice skills, strategies, and processes?

☐ Structure practice sessions spaced closely together.
☐ Plan for practice sessions that are gradually less structured and more varied.
☐ Plan for practice sessions that help students develop fluency.
☐ Consider cooperative learning strategies for practice activities. This can occur once students have engaged in some form of individual practice and then collaborate with peers to check their work an dialogue about what led to their correct/incorrect answer.

EXAMPLE OF CONTENT DELIVERY FOR A 50-MINUTE CLASS PERIOD INCLUDING PRACTICE

Chunk #1 7 minutes	Chunk #2 10 minutes	Chunk #3 13 minutes	Chunk #4 10 minutes	Chunk #5 10 minutes
Review of content from yesterday 5 minutes	New content 8 minutes	New content 10 minutes	Guided practice with close monitoring 8 minutes	Independent practice (once students demonstrate an adequate degree of success) 7 minutes
Processing opportunity 2 minutes	Processing opportunity 2 minutes	Processing opportunity 3 minutes	Processing opportunity 2 minutes	Processing opportunity 3 minutes

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Slide 4:

red

form the
h increased

practice skills, strategies, and processes?

aced closely together.
t are gradually less structured and more varied.
t help students develop fluency.
g strategies for practice activities. This can occur once
ne form of individual practice and then collaborate with
dialogue about what led to their correct/incorrect

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Slide 5:

HANDOUT PAGE 18

PRACTICING AND DEEPENING LESSONS

Element 9 *Structured Practice Sessions*	• Involves the teacher engaging students in practice activities that help them develop fluency
Element 10 *Examining Similarities and Differences*	• Involves the teacher helping students deepen their knowledge by examining similarities and differences between items
Element 11 *Examining Errors in Reasoning*	• Involves the teacher helping students deepen their understanding of informational content by having them examine their own reasoning or the logic of the information presented to them

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Slide 6:

HANDOUT PAGE 20

Element #10: Examining Similarities and Differences

Comparing is • the process of identifying similarities and differences among or between things and ideas.

Classifying is • the process of grouping things that are alike into categories based on their characteristics.

Creating Metaphors is • the process of identifying a general or basic pattern that connects information that is not related on the literal or surface level.

Creating Analogies is • the process of identifying the relationship between two sets of items.

Category	Average Effect Size	Percentile Gain
Identifying Similarities and Differences	1.61	45
Summarizing and Note-taking	1.00	34
Reinforcing Effort and Providing Recognition	.80	29
Homework and Practice	.77	28
Nonlinguistic Representations	.75	27
Cooperative Learning	.73	27
Setting Objectives/Providing Feedback	.61	23
Generating and Testing Hypotheses	.61	23
Questions, Cues, and Advance Organizers	.59	22

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Category	Average Effect Size	Percentile Gain
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Setting Objectives/Providing Feedback	.61	23
Generating and Testing Hypotheses	.61	23
Questions, Cues, and Advance Organizers	.59	22

Identifying Similarities and Differences
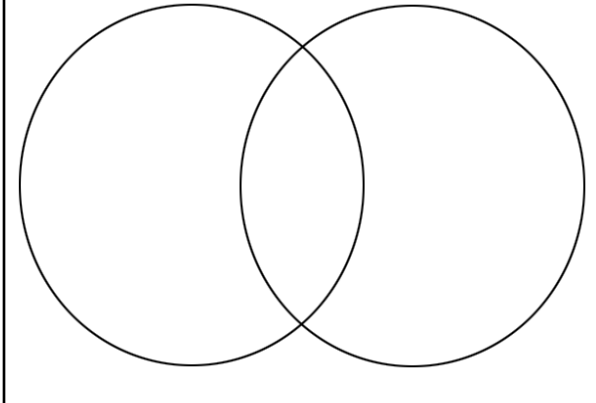

Identifying Similarities and Differences

Effective tools include:

– Venn diagrams
– Comparison matrix
– Classifying activities
– Concept maps
– Graphic organizers
– T charts
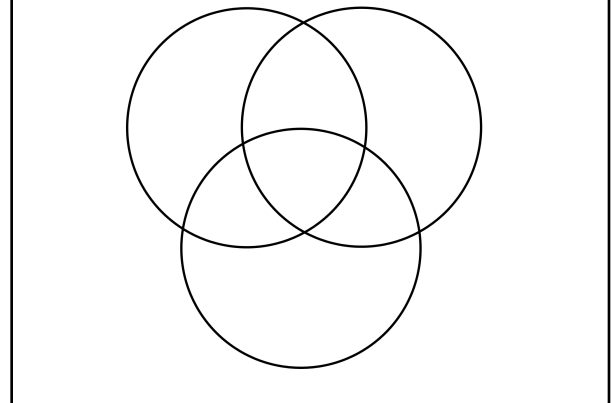– Pro and con grids
– Metaphors and analogies

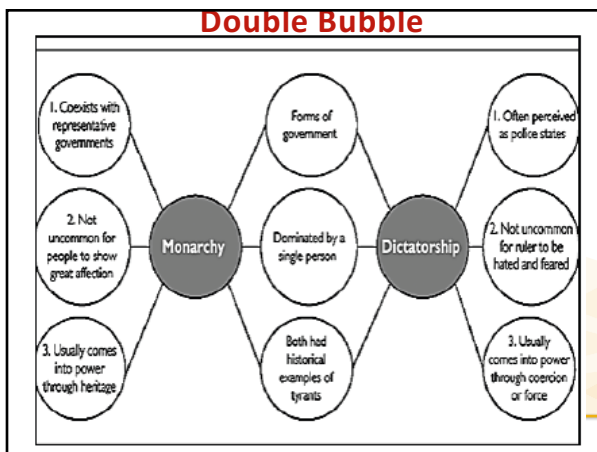888.849.0851   marzanoresearch.com   MARZANO Research

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Double Venn Diagram

Triple Venn Diagram

Double Bubble

Monarchy — Dictatorship

1. Coexists with representative governments
2. Not uncommon for people to show great affection
3. Usually comes into power through heritage

Forms of government
Dominated by a single person
Both had historical examples of tyrants

1. Often perceived as police states
2. Not uncommon for ruler to be hated and feared
3. Usually comes into power through coercion or force

Sentence Stem for Comparing
_____ and _____ are similar because they both
_____
_____
_____ .
_____ and _____ are different because
_____ is _____, but _____ is _____.
_____ is _____, but _____ is _____.
_____ is _____, but _____ is _____.

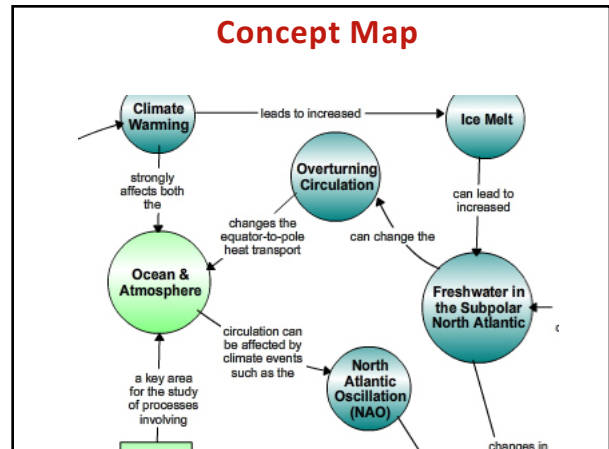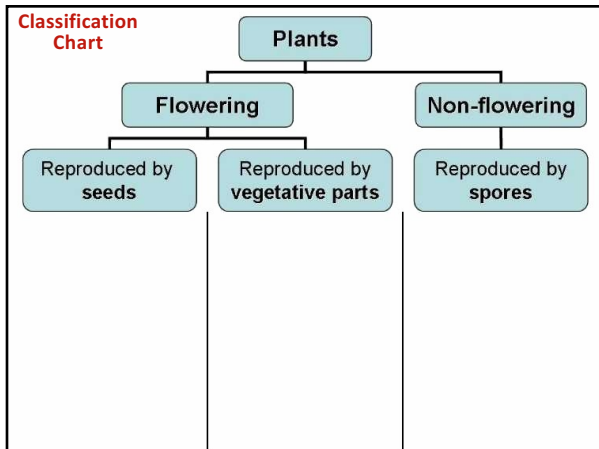888.849.0851   marzanoresearch.com   MARZANO Research

T-Chart

Classification Chart

Characters that Overcame Hardship	Characters that Had Unique Personalities	Characters that Experienced Significant Change

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Classification Chart

Plants

Flowering — Non-flowering

Reproduced by **seeds** | Reproduced by **vegetative parts** | Reproduced by **spores**

Concept Map

Climate Warming — leads to increased → Ice Melt

strongly affects both the

Overturning Circulation — can lead to increased

changes the equator-to-pole heat transport — can change the

Ocean & Atmosphere

Freshwater in the Subpolar North Atlantic

circulation can be affected by climate events such as the

a key area for the study of processes involving

North Atlantic Oscillation (NAO)

changes in

Pro/Con Grid

Decision Grid I

Identify the problem: _____

_____

Choices	Benefits	Costs

Examining similarities and differences…

- Can be effectively taught by using:

  – Teacher-Directed Tasks
  – Student-Directed Tasks
  – Graphic Organizers

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Teacher-directed tasks…

- Give students more of the essential information they will need to complete the task.

Student-directed tasks…

- Used when students have become more skilled at using a particular reasoning process.

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Teacher-Directed Comparison Matrix

Characteristics	Solids	Liquids	Gases	Comparisons
Particle Size				Similarities
				Differences
Space between Particles				Similarities
				Differences
Fills the shape of its container				Similarities
				Differences
Compression				Similarities
				Differences

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Student-Directed Comparison Matrix

Characteristics	Solids	Liquids	Gases	Comparisons
				Similarities
				Differences
				Similarities
				Differences
				Similarities
				Differences
				Similarities
				Differences

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Similarities and Differences

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Literary Devices

Slide 1

Literary Devices				
Personification	Metaphor	Onomatopoeia	Hyperbole	Alliteration

love is a roller coaster
old as the hills
lightening dances across the sky
buzz
Fred's friends
did it a million times
buzzing bees
time is money

thump
book flew off the shelf
laughter is music to the soul
magnificent mountains
splash
dying of shame
flowers are begging for water

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Slide 2

1

- **Work with your elbow partner to review what each of these literary devices is…feel free to use technology during your review process.**

o Personification
o Metaphor
o Onomatopoeia
o Hyperbole
o Alliteration

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Slide 3

CHOOSE ONE OR ONE OF YOUR OWN…

_____ is true about personification, while _____ is true about hyperbole.

A metaphor is different from a hyperbole in that _____.

Alliteration and onomatopoeia both _____.

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Slide 4

Literary Devices				
Personification	Metaphor	Onomatopoeia	Hyperbole	Alliteration

love is a roller coaster
old as the hills
lightening dances across the sky
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Fred's friends
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Slide 5

Literary Devices				
Personification	Metaphor	Onomatopoeia	Hyperbole	Alliteration
Lightening danced across the sky

Book flew off the shelf

Flowers begging for water | Love is a roller coaster

Time is money

Laughter is music to the soul | Buzz

Thump

Splash | Old as the hills

Did it a million times

Dying of shame | Buzzing bees

Fred's friends

Magnificent mountains |

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Slide 6

Identifying Similarities and Differences

Effective tools include:
- Venn diagrams
- Comparison matrix
- Classifying activities
- Concept maps
- Graphic organizers
- T charts
- Pro and con grids
- Metaphors and **analogies**

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Creating Analogies

The process of **identifying relationships** between **two sets of items**.

Analogies help us see how seemingly dissimilar things are similar, increasing our understanding of new information.

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Analogies

A is to B

_____

(relationship)

as

C is to D

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A key with these is that students must explain the relationship.

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Creating & Solving Analogies

Bone is to skeleton as word is to _____.

Rhythm is to music as _____ is to _____.

_____ is to New York City as _____ is to _____.

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Slide 1 (Handout Page 18)

HANDOUT PAGE 18

PRACTICING AND DEEPENING LESSONS

Element 9 *Structured Practice Sessions*	• Involves the teacher engaging students in practice activities that help them develop fluency
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Slide 2

Examining Errors in Reasoning

o Primary intellectual skill (Costa, 2001)

o A powerful way to deepen understanding of critical knowledge

Slide 3 (Handout Page 22)

HANDOUT PAGE 22

Element #11: Examining Errors in Reasoning

If students are able to examine their own reasoning, they:

❑ Can describe errors or informal fallacies in information.
❑ Can evaluate the efficiency of a process.
❑ Can identify errors in reasoning.
❑ Can identify support for their perspectives using the appropriate evidence.
❑ Can identify the supports behind multiple perspectives.
❑ Can identify the evidence used to support the claim of others in presented information.
❑ Can identify and take various perspectives.

What We Can Do To Help Our Students Examine Their Reasoning

1. *Use authentic examples with students.* Collect examples of errors in reasoning from everyday life (newspapers, Internet, television, advertising, etc.). Use these examples to show students that faulty reasoning is everywhere. Invite students to bring examples to share in your classroom.
2. *Require students to provide justification.* Provide ongoing opportunities for students to explain their work and provide rationale for their processes and steps. Encourage multiple ways to solve problems and expect them to explain their thinking.
3. *Anticipate student errors and model them in the presentation of content.* Design lessons to incorporate common errors you anticipate students might make. Help them become aware of these common errors so that they can avoid pitfalls.
4. *Model and think aloud for students.*
5. *Give students enough "think time" to reason during class discussions.*

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Slide 4

Errors in Reasoning

If students are able to examine their own reasoning, they:

❑ Can describe errors or informal fallacies in information.
❑ Can evaluate the efficiency of a process.
❑ Can explain the overall structure of an argument presented to support a claim.
❑ Can identify errors in reasoning.
❑ Can identify support for their perspectives using the appropriate evidence.
❑ Can identify the supports behind multiple perspectives.
❑ Can identify the evidence used to support the claim of others in presented information.
❑ Can identify and take various perspectives.

What We Can Do To Help Our Students Examine Their Reasoning

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Slide 5

information.
❑ Can identify and take various perspectives.

What We Can Do To Help Our Students Examine Their Reasoning

1. *Use authentic examples with students.* Collect examples of errors in reasoning from everyday life (newspapers, Internet, television, advertising, etc.). Use these examples to show students that faulty reasoning is everywhere. Invite students to bring examples to share in your classroom.
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Slide 6

18. What do I typically do to help students exam

When content is informational, the teacher helps students deepen the ing or the logic of the information as presented to them.

Teacher Evidence

❑ Teacher asks students to examine information for errors or informal fallacies such as:
  • Faulty logic
  • Attack
  • Weak reference
  • Misinformation
❑ Teacher asks students to examine the strength of support presented for a claim by looking for the following:
  • Statement of a clear claim
  • Evidence for the claim presented

Student Ev

❑ Whe infor
❑ Stud error
❑ Whe struc claim
❑ Whe statis

Slide 1

Faulty Logic

=

forming conclusions using unsound reasoning

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Slide 2

Give learners opportunities to find the errors in reasoning…

"Let them eat _____."

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Slide 3

"Let them eat _."

But did she really???

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Slide 4

Did Marie-Antoinette really say "Let them eat cake"?

It's one of the most famous quotes in history. At some point around 1789, when being told that her French subjects had no bread, Marie-Antoinette (bride of France's King Louis XVI) supposedly sniffed, "Qu'ils mangent de la brioche"—"Let them eat cake." With that callous remark, the queen became a hated symbol of the decadent monarchy and fueled the revolution that would cause her to (literally) lose her head several years later. But did Marie-Antoinette really say those infuriating words? Not according to historians. Lady Antonia Fraser, author of a biography of the French queen, believes the quote would have been highly uncharacteristic of Marie-Antoinette, an intelligent woman who donated generously to charitable causes and, despite her own undeniably lavish lifestyle, displayed sensitivity towards the poor population of France.

That aside, what's even more convincing is the fact that the "Let them eat cake" story had been floating around for years before 1789. It was first told in a slightly different form about Marie-Thérèse, the Spanish princess who married King Louis XIV in 1660. She allegedly suggested that the French people eat "la croûte de pâté" (or the crust of the pâté). Over the next century, several other 18th-century royals were also blamed for the remark, including two aunts of Louis XVI. Most famously, the philosopher Jean-Jacques Rousseau included the pâté story in his "Confessions" in 1766, attributing the words to "a great princess" (probably Marie-Thérèse). Whoever uttered those unforgettable words, it was almost certainly not Marie-Antoinette, who at the time Rousseau was writing was only 10 years old—three years away from marrying the French prince and eight years from becoming queen.

Related

Marie-Antoinette - Topic
French Revolution - Topic

Slide 5

information.
☐ Can identify and take various perspectives.

What We Can Do To Help Our Students Examine Their Reasoning

1. *Use authentic examples with students.* Collect examples of errors in reasoning from everyday life (newspapers, Internet, television, advertising, etc.). Use these examples to show students that faulty reasoning is everywhere. Invite students to bring examples to share in your classroom.
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4. *Model and think aloud for students.*
5. *Give students enough "think time" to reason during class discussions.*

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Slide 6

Three Non-Negotiables of Every Lesson of Instruction

1) Quality planning
2) Quality content delivery
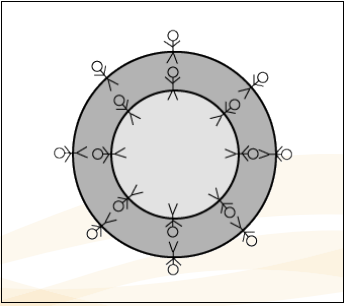3) Quality informal and/or formal assessment

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Four "W"s Text Protocol

Adapted from *Four "A"s Text Protocol* from Judith Gray, Seattle, WA 2005

1. Read the text silently, highlighting it and writing notes in the margin in answer to the following four questions:
   - What **Wisdom** is shared in the text?
   - What content do you **Wrestle** with in the text?
   - What in the text causes you to **Wonder**?
   - What in the text can you **Weave** into your work?

2. Upon cue, have each person identify one piece of **wisdom** in the text, citing the text as evidence.

3. Move through the remaining three questions, making sure each person's voice is heard.

4. As a whole group, respond to the question, "What implications does the article present to us as we use assessments in our classrooms?"

Inside-Outside Circle

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What wisdom is shared in the text?
What content do you wrestle with in the text?
What in the text causes you to wonder?
What in the text can you weave into your work?

What wisdom is shared in the text?
What content do you wrestle with in the text?
What in the text causes you to wonder?
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What in the text causes you to wonder?
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What wisdom is shared in the text?
What content do you wrestle with in the text?
What in the text causes you to wonder?
What in the text can you weave into your work?

HANDOUT PAGE 29

DAILY LESSON PLAN

Unit: _____ Week: _____ Day: _____

What will I do to remind students about the instructional goals and how today's class fits into those goals?

Will I use a "hook" or "bell ringer" in today's class?

What type(s) of lessons will I use in today's class (Direct Instruction; Practicing and Deepening; Knowledge Application)?

How will I assess students during the class period?
- Instructional feedback at the whole class level
- Assessments of individual students

What activities will I use to ensure high engagement?

Are there specific students in class to whom I should pay particular attention and what actions will I take with those students?
- Remind them of rules and procedures?
- Deliberately interact with the student to foster a positive relationship?
- Go out of my way to interact with reluctant learners?

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